

5 What is claimed is:

1. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

- a) an amino acid sequence of SEQ ID NO:1,
- b) a naturally-occurring amino acid sequence having at least 96% sequence identity to the sequence of SEQ ID NO:1,
- c) a biologically-active fragment of the amino acid sequence of SEQ ID NO:1, and
- d) an immunogenic fragment of the amino acid sequence of SEQ ID NO:1.

15 2. An isolated polypeptide of claim 1, having a sequence of SEQ ID NO:1.

3. An isolated polynucleotide encoding a polypeptide of claim 1.

4. A recombinant polynucleotide comprising a promoter sequence operably linked to 20 a polynucleotide of claim 3.

5. A cell transformed with a recombinant polynucleotide of claim 4.

6. A method for producing a polypeptide of claim 1, the method comprising:

25 a) culturing a cell under conditions suitable for expression of the polypeptide, wherein said cell is transformed with a recombinant polynucleotide, and said recombinant polynucleotide comprises a promoter sequence operably linked to a polynucleotide encoding the polypeptide of claim 1, and

b) recovering the polypeptide so expressed.

30 7. An isolated antibody which specifically binds to a polypeptide of claim 1.

8. An isolated polynucleotide comprising a sequence selected from the group consisting of:

- a) a polynucleotide sequence of SEQ ID NO:2,
- b) a naturally-occurring polynucleotide sequence having at least 90% sequence

- 5 identity to the sequence of SEQ ID NO:2,
- c) a polynucleotide sequence complementary to a),
 - d) a polynucleotide sequence complementary to b) and
 - e) a ribonucleotide equivalent of a)-d).
- 10 9. An isolated polynucleotide comprising at least 60 contiguous nucleic acids of
claim 8.
- 15 10. A method for detecting a target polynucleotide in a sample, said target
polynucleotide having a sequence of a polynucleotide of claim 8, the method comprising:
- a) hybridizing the sample with a probe comprising at least 20 contiguous nucleotides
comprising a sequence complementary to said target polynucleotide in the sample, and which
probe specifically hybridizes to said target polynucleotide, under conditions whereby a
hybridization complex is formed between said probe and said target polynucleotide or
fragments thereof, and
 - b) detecting the presence or absence of said hybridization complex, and, optionally,
if present, the amount thereof.
- 25 11. A method of claim 10, wherein the probe comprises at least 60 contiguous
nucleotides.
- 20 12. A method for detecting a target polynucleotide in a sample, said target
polynucleotide having a sequence of a polynucleotide of claim 8, the method comprising:
- a) amplifying said target polynucleotide or fragment thereof using polymerase chain
reaction amplification, and
 - b) detecting the presence or absence of said amplified target polynucleotide or
fragment thereof, and, optionally, if present, the amount thereof.
- 30 13. A composition comprising a polypeptide of claim 1 and an acceptable excipient.
- 35 14. A composition of claim 13, wherein the polypeptide has the sequence of SEQ ID
NO:1.

5 15. A method for screening a compound for effectiveness as an agonist of a polypeptide of claim 1, the method comprising:

- a) exposing a sample comprising a polypeptide of claim 1 to a compound, and
- b) detecting agonist activity in the sample.

10 16. A method for screening a compound for effectiveness as an antagonist of a polypeptide of claim 1, the method comprising:

- a) exposing a sample comprising a polypeptide of claim 1 to a compound, and
- b) detecting antagonist activity in the sample.

15 17. A method for screening a compound for effectiveness in altering expression of a target polynucleotide, wherein said target polynucleotide comprises a polynucleotide sequence of claim 8, the method comprising:

- a) exposing a sample comprising the target polynucleotide to a compound, under conditions suitable for the expression of the target polynucleotide,
- b) detecting altered expression of the target polynucleotide, and
- c) comparing the expression of the target polynucleotide in the presence of varying amounts of the compound and in the absence of the compound.

20 18. A method for assessing toxicity of a test compound, said method comprising:

- a) treating a biological sample containing nucleic acids with the test compound;
- b) hybridizing the nucleic acids of the treated biological sample with a probe comprising at least 20 contiguous nucleotides of a polynucleotide of claim 8 under conditions whereby a specific hybridization complex is formed between said probe and a target polynucleotide in the biological sample, said target polynucleotide comprising a polynucleotide sequence of a polynucleotide of claim 8 or fragment thereof;
- c) quantifying the amount of hybridization complex; and
- d) comparing the amount of hybridization complex in the treated biological sample with the amount of hybridization complex in an untreated biological sample, wherein a difference in the amount of hybridization complex in the treated biological sample is indicative of toxicity of the test compound.

- 5 19. A diagnostic test for a condition or disease associated with the expression of
HSEBP in a biological sample comprising the steps of:
- 10 a) combining the biological sample with an antibody of claim 7, under conditions
suitable for the antibody to bind the polypeptide and form an antibody: polypeptide complex;
and
- 15 b) detecting the complex, wherein the presence of the complex correlates with the
presence of the polypeptide in the biological sample.
- 20 20. The antibody of claim 7, wherein the antibody is:
- 15 (a) a chimeric antibody;
- 20 (b) a single chain antibody;
- 25 (c) a Fab fragment;
- 30 (d) a F(ab')₂ fragment; or
- 35 (e) a humanized antibody.
- 20 21. A composition comprising an antibody of claim 7 and an acceptable excipient.
- 25 22. A method of diagnosing a condition or disease associated with the expression of
HSEBP in a subject, comprising administering to said subject an effective amount of the
composition of claim 21.
- 30 23. A composition of claim 21, wherein the antibody is labeled.
- 35 24. A method of diagnosing a condition or disease associated with the expression of
HSEBP in a subject, comprising administering to said subject an effective amount of the
composition of claim 23.
- 40 25. A method of preparing a polyclonal antibody with the specificity of the antibody
of claim 7 comprising:
- 35 a) immunizing an animal with a polypeptide of SEQ ID NO:1 or an immunogenic
fragment thereof under conditions to elicit an antibody response;
- 40 b) isolating antibodies from said animal; and

- 5 c) screening the isolated antibodies with the polypeptide thereby identifying a
polyclonal antibody which binds specifically to a polypeptide of SEQ ID NO:1.
- 10 26. An antibody produced by a method of claim 25.
- 15 27. A composition comprising the antibody of claim 26 and a suitable carrier.
- 20 28. A method of making a monoclonal antibody with the specificity of the antibody
of claim 7 comprising:
a) immunizing an animal with a polypeptide of SEQ ID NO:1 or an immunogenic
fragment thereof under conditions to elicit an antibody response;
b) isolating antibody producing cells from the animal;
c) fusing the antibody producing cells with immortalized cells to form monoclonal
antibody-producing hybridoma cells;
d) culturing the hybridoma cells; and
e) isolating from the culture monoclonal antibody which binds specifically to a
polypeptide of SEQ ID NO:1.
- 25 29. A monoclonal antibody produced by a method of claim 28.
- 30 30. A composition comprising the antibody of claim 29 and a suitable carrier.
- 35 31. The antibody of claim 7, wherein the antibody is produced by screening a Fab
expression library.
- 40 32. The antibody of claim 7, wherein the antibody is produced by screening a
recombinant immunoglobulin library.
- 45 33. A method for detecting a polypeptide of SEQ ID NO:1 in a sample comprising
the steps of:
a) incubating the antibody of claim 7 with a sample under conditions to allow specific
binding of the antibody and the polypeptide; and

- 5 b) detecting specific binding, wherein specific binding indicates the presence of a polypeptide of SEQ ID NO:1 in the sample.

34. A method of purifying a polypeptide of SEQ ID NO:1 from a sample, the method comprising:

- 10 a) incubating the antibody of claim 7 with a sample under conditions to allow specific binding of the antibody and the polypeptide; and
 b) separating the antibody from the sample and obtaining purified polypeptide of SEQ ID NO:1.

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